

**TITLE: NOVEL POTASSIUM CHANNELS AND
GENES ENCODING THESE POTASSIUM CHANNELS**

ABSTRACT

This invention relates to novel potassium channels and genes encoding these channels. More specifically the invention provides isolated polynucleotides encoding the KCNQ4 potassium channel, cells transformed with these polynucleotides, transgenic animals comprising genetic mutations, and the use of the transformed cells and the transgenic animals for the *in vitro* and *in vivo* screening of drugs affecting KCNQ4 containing potassium channels.